NATIONAL INSTITUTES OF HEALTH
WARREN GRANT MAGNUSON CLINICAL CENTER
NURSING DEPARTMENT

Standard of Practice: **Care of the Patient Receiving Antithymocyte Globulin (ATG)**

I. Background Information

A. Currently there are two ATG products
- Thymoglobulin is produced from serum of rabbits and is 10X more potent than Atgam.
- Atgam is produced from serum of horses.

B. These 2 products are not interchangeable and RN must verify dispensed product against prescribed product.
C. Desensitization Infusion is delivered as a continuous infusion X 4 days.
D. Intermittent Infusion is delivered as an intermittent infusion on 4 consecutive days.

II. General

A. Assessment
1. Patients may undergo ATG intradermal skin test to determine ATG 24-hour infusion delivery mode, i.e., desensitization infusion or intermittent daily infusions. 72 hours prior to intradermal skin test, patients should avoid use of H_1 receptor antagonists (antihistamines)
2. Prior to initiation of ATG, RN will:
   a. Assess recent use (within 72 hours) of beta blockers, steroids, and H_1 receptor antagonists
   b. Assess history of allergies to horses and rabbits
   c. Evaluate existing or potential venous access
   d. Evaluate recent CBC
   e. Confirm with prescriber ATG intradermal skin test results, recent medication history, allergies, and CBC
   f. Verify that emergency medications are readily available in the area where patient will receive treatment.
3. During ATG Administration
   a. Assess peripheral IV site every 8 hours for thrombophlebitis
   b. Assess for adverse reactions every 4 hours (flush, hives, itching, SOB, difficulty breathing, chest tightness)
4. Post-ATG Administration
   a. Assess for serum sickness daily X 7-14 days

B. Interventions
1. Patient may not leave the floor during ATG infusion unless accompanied by RN
2. ATG will be mixed only in NS, D_5NS, or $D_{5\ 1/2}$ NS
3. ATG will be administered through a central vein or a high-flow peripheral vein
4. Stopcock will be used for IV administration
5. ATG will be administered using a 0.22 micron high-pressure filter

6. Ensure emergency equipment is available in patient's room:
    a. Normal saline flush solution
    b. Oxygen
    c. Suction machine
    d. Vital sign monitor
7. With a second RN:
    a. Verify all drug and rate calculations
    b. Correct product (Thymoglobulin vs. Atgam) has been dispensed
    c. Drug expiration date

C. Other considerations
    I. ATG should not be administered 2 hours before or after administration of blood products or amphotericin B formulations unless emergent condition arises.
    II. If blood products are required during the 4-day continuous infusion (desensitization process), blood products can be administered concurrently.

III. Desensitization (intradermal skin test = positive) Infusion

A. General
1. Procedure will be performed on the PCU
2. Desensitization procedure will be coordinated with the prescriber, allergist, clinical pharmacist, charge nurse, and assigned nurse.
3. 1:1 nursing care will be provided and will be maintained until full infusion rate has been achieved and maintained X 30 minutes
4. Allergist will remain with the patient until full infusion rate has been achieved.
5. RN will consult with allergist if ATG desensitization procedure needs to be interrupted.

B. Assessment
1. Complete physical assessment
2. Measure and record vital signs (TPR, BP, oxygen saturation)
3. Continually monitor for adverse reaction (flushing, hives, itching, SOB, difficulty breathing, chest tightness) until the full infusion rate has been achieved and maintained for 30 minutes.
4. Once full infusion rate has been achieved and maintained for 30 minutes, monitor for adverse reaction (flushing, hives, itching, SOB, difficulty breathing, chest tightness) every 4 hours.

C. Interventions
1. NPO status will be initiated 6 hours prior to desensitization procedure and will be maintained until maximum planned infusion rate has been achieved
2. Measure and record vital signs (TPR, BP, oxygen saturation)
    a. Immediately prior to initiation of infusion
    b. Every 5 minutes until maximum planned infusion rate has been achieved
    c. With each rate increase

3. Once maximum planned infusion rate has been achieved, vital signs (TPR, BP, oxygen saturation) will be measured:
    a. Every 15 minutes X 1 then,
    b. Every 30 minutes X 2 then,
    c. Every hour X 4 and then,
    d. Every 4 hours until infusion is completed
4. RN will administer any premedications 30 minutes prior to initiation of infusion or as directed by prescriber.
5. Infusion Rate:
    a. will be prescribed by the allergist
    b. once full infusion rate has been achieved and maintained, infusion will continue uninterrupted X 4 days or as prescribed.
6. Once full rate has been successfully achieved, RN will consult with prescriber to resume normal diet orders.

IV. Intermittent Daily Administration (intradermal skin test = negative)

A. General
    1. Total infusion time is typically at least 4 hours for 4 consecutive days
B. Assessment
    1. Complete physical assessment
    2. On the first day of infusion, monitor for adverse reaction (flushing, hives, itching, SOB, difficulty breathing, chest tightness) continually during the first 15 minutes of the first dose and at least every hour until the infusion is completed.
    3. On subsequent days, monitor for adverse reaction at least every 4 hours.
C. Interventions
    1. Prescriber will remain on the unit during the first 15 minutes of the initial dose of ATG
    2. RN will remain with patient during the first 15 minutes of the initial dose of ATG
    3. Measure and record vital signs (TPR, BP, oxygen saturation):
        a. Immediately prior to initiating infusion
        b. Every 15 minutes x4 then,
        c. Every 30 minutes x2 then,
        d. Every hour until infusion is completed
    4. On subsequent days, measure and record vital signs:
        a. Immediately prior to initiating infusion
        b. 30 minutes after initiating infusion and then,
        c. every hour until infusion is complete
    5. RN will administer any premedications 30 minutes prior to initiation of infusion or as directed by prescriber.
    6. Infusion Rate:
        a. The initial infusion rate will be 10% of the total volume/hr., e.g., 500 cc bottle will start @ 50 cc/hr X 15 minutes
        b. If there are no signs of adverse reaction, the infusion rate will be advanced to complete the infusion as prescribed.

D. Adverse Reaction
   1. If the patient complains of flushing, SOB, difficulty breathing, enlargement of tongue, tightening of throat or chest, wheezing, or hypotension, RN will immediately:
      a. Stop the ATG infusion
      b. Initiate infusion of 0.9% saline
      c. Maintain patency of IV line
      d. Notify prescriber STAT or activate "Code Blue"
   2. If the patient experiences tachycardia, elevated temperature >1° above baseline, rigors, hives, rash, or pruritis, RN will
      a. Maintain the infusion
      b. Call the prescriber
      c. Continue to closely monitor

V. Documentation
In MIS or on approved Medical Records form, document
A. Medication administration including ATG lot number and bag number if receiving continuous infusion.
B. All nursing interventions including vital signs
C. Patient's response to infusion
D. Patient/Family teaching

VI. REFERENCES

1. McEvoy, G. (1995). American Hospital Formulary Service: AHFS Drug Information 98. American Society of Hospital Pharmacists. Bethesda, MD, pp. 2599-2605.
2. Middleton, E., Reed, C., Ellis, E., Adkinson, N., Yunginger, J., and Busse, W. (1993). Allergy: Principles and Practice, Vols. 1 and 2, (4th ed.). St. Louis, MO: Mosby Year Book, Inc.
3. Young, N. (1992). Clot Stoppers: Current Therapy in Hematology-Oncology, (4th Ed., pp.3-4). Philadelphia, PA: B.C. Decker.

Approved:

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